

# Translation

## PATENT COOPERATION TREATY

PCT/JP2003/016012



# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 10701-GE-PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/016012	International filing date (day/month/year) 15 December 2003 (15.12.2003)	Priority date (day/month/year) 20 October 2003 (20.10.2003)
International Patent Classification (IPC) or national classification and IPC H01L 25/065, 25/07, 25/18		
Applicant GENUSION INC.		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
  - ☒ (sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:
    - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
  - ☒ Box No. I Basis of the report
  - ☐ Box No. II Priority
  - ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Box No. IV Lack of unity of invention
  - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Box No. VI Certain documents cited
  - ☐ Box No. VII Certain defects in the international application
  - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 19 May 2005 (19.05.2005)	Date of completion of this report 27 October 2005 (27.10.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☒ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ The international application as originally filed/furnished

☒ the description:

pages \_\_\_\_\_ 5-15 \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_ 1-4 \_\_\_\_\_ received by this Authority on \_\_\_\_\_ 07 October 2005 (07.10.2005)  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the claims:

pages \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages\* \_\_\_\_\_ 1,7,8,10-12 \_\_\_\_\_ received by this Authority on \_\_\_\_\_ 07 October 2005 (07.10.2005)  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the drawings:

pages \_\_\_\_\_ 1-9 \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) – see Supplemental Box-Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_  
☒ the claims, Nos. \_\_\_\_\_ 2-6,9 \_\_\_\_\_  
☐ the drawings, sheets/figs \_\_\_\_\_  
☐ the sequence listing (*specify*): \_\_\_\_\_  
☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/figs \_\_\_\_\_  
☐ the sequence listing (*specify*): \_\_\_\_\_  
☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	8, 10, 11	YES
	Claims	1, 7	NO
Inventive step (IS)	Claims		YES
	Claims	1, 7, 8, 10, 11	NO
Industrial applicability (IA)	Claims	1, 7, 8, 10, 11	YES
	Claims		NO

### 2. Citations and explanations

- Document 1: JP 5-343608 A (Hitachi, Ltd.), 24 December 1993
- Document 2: JP 10-335574 A (Nippon Telegraph And Telephone Corp.), 18 December 1998
- Document 3: JP 62-134939 A (Sony Corp.), 18 June 1987
- Document 4: JP 2-139669 A (Mitsubishi Mining and Cement Co., Ltd.), 29 May 1990
- Document 5: JP 11-204719 A (Toshiba Corp.), 30 July 1999, column 9, lines 9 to 39 and fig. 7 (Family: none)
- Document 6: JP 8-236693 A (NEC Corp.), 13 September 1996, column 1, lines 27 to 33 (Family: none)
- Document 7: JP 8-70024 A (Fujitsu Ltd.), 12 March 1996, column 7, lines 7 to 23 and fig. 1 and 4 (Family: none)
- Document 8: JP 9-330961 A (Hitachi, Ltd.), 22 December 1997, column 4, line 23 to column 5, line 19 and fig. 1 to 3 (Family: none)

The inventions set forth in claims 1 and 7 lack novelty in the light of newly cited document 5. Document 5 discloses a semiconductor device wherein an intermediate mounting substrate (9), which comprises wires and memory

chips that have been sealed by means of a resin (37), is mounted and connected to a semiconductor chip (1), the semiconductor chip (1) is then mounted upon a mounting substrate and the resulting structure is sealed by means of a resin (38). Therein, there is no difference between the semiconductor device that is disclosed in document 5 and the semiconductor device that comprises a sub-substrate for mounting a semiconductor chip wherein the test terminals have been cut away.

The inventions set forth in claims 1 and 7 lack novelty in the light of document 1 cited in the international search report. Document 1 discloses a hybrid integrated circuit device that is configured by forming a sub-assembly (2) with a chip resistor (12) and an integrated circuit (13) mounted thereupon, which is covered with a package (15) that was formed by means of a transfer mold; mounting the aforementioned sub-assembly (2), the chip resistor (3) and the integrated circuit (4) upon a wiring substrate (1); and then covering the resulting structure with a package (8) that was formed by means of a transfer mold. Therein, there is no difference between the semiconductor device that is disclosed in document 1 and the semiconductor device that comprises a sub-substrate for mounting a semiconductor chip wherein the test terminals have been cut away.

The inventions set forth in claims 8, 10 and 11 do not involve an inventive step in the light of document 1 cited in the international search report and newly cited documents 5 to 8. Document 6 discloses a multi-chip module that is configured by mounting a plurality of chips upon a sub-substrate in advance, inspecting the resulting structure and thereafter mounting the resulting structure upon a single substrate. In addition, documents 7 and 8 disclose semiconductor devices wherein inspection pads are provided to the peripheral parts of the substrate, and are

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then cut away and removed after inspection.